Name: _____ Date: _____

Polynomial Factoring EXAM (version 658)

1. **The quadratic formula says if $ax^2 + bx + c = 0$ then $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$. Use the quadratic formula to solve the following equation.**

   $$x^2 + 2x + 29 = 0$$

   Simplify your answer(s) as much as possible.

2. **Express the product of $-5 - 9i$ and $2 - 7i$ in standard form $(a + bi)$.**

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3. **Write function $f(x) = x^3 + 2x^2 - 13x + 10$ in factored form. I'll give you a hint: one factor is $(x - 1)$.**

4. **Polynomial p is defined below in factored form.**

$$p(x) \;=\; -(x+8)^2 \cdot (x+5)^2 \cdot (x+1) \cdot (x-3)$$

Sketch a graph of polynomial $y = p(x)$.